WHAT IS CLAIMED IS:

1. A method for selectively inhibiting angiogenesis which comprises the step of administering to a subject an effective amount of an anti-angiogenic compound consisting essentially of two units complexed to a copper metal ion, wherein said units are independently selected from the group consisting of an amino acid, a dipeptide or an analog thereof which has a carboxyl and an amino group capable of complexing with copper and that targets cells of an angiogenic tissue.

2. A method for obtaining a compound which has an anti-angiogenic activity from a cartilage material which comprises the steps of:

a) extracting said anti-angiogenic activity from cartilage material reduced to solid particles whose size is less than or equal to about 500 µm into an aqueous solution, resulting in a homogenous mixture of said solid particles and a first liquid extract having said activity;

b) separating solid particles from said first liquid extract;

c) fractionating said first liquid extract, to recover a second extract comprising molecules having a molecular weight less than about 500 KDa; and

d) treating said second extract under denaturating conditions of pH or temperature to generate a low molecular weight compound comprising amino acids, dipeptides, analogs thereof, and copper-complexes thereof.

3. The method of claim 2 wherein said pH ranges from about 2 to about 6.

4. The method of claim 2 wherein said temperature ranges from about 37° C to 100° C.

5. The method of claim 2, further comprising the step of purifying said compound from said neutralized extract.

6. A cartilage extract obtained from the process of claim 2.

7. The cartilage extract of claim 6 wherein said cartilage extract is a shark cartilage extract.

8. An anti-angiogenic compound consisting essentially of two units complexed to a copper metal ion, wherein said units are independently selected from the group consisting of an amino acid, a dipeptide or an analog thereof which has a carboxyl and an amino group capable of complexing with copper and that targets cells of an angiogenic tissue.

9. A compound as defined in claim 8, wherein said amino acid is selected from the group consisting of: threonine, aspartic acid, glutamic acid, glycine, alanine, valine, leucine, isoleucine, arginine, lysine, proline, glutamine, serine and histidine.

10. A compound as defined in claim 8, wherein said dipeptide is glutamyl-tryptophane.

11. A compound as defined in claim 8, wherein said analog is creatine or a creatine-derivative.

12. A composition of matter consisting essentially of an effective amount of a compound as defined in claim 8, and a pharmaceutically acceptable vehicle.

13. A composition of matter as defined in claim 12, wherein said amino acid is selected from the group consisting of threonine, aspartic acid, glutamic acid, glycine, alanine, valine, leucine, isoleucine, arginine, lysine, proline, glutamine, serine, histidine, or any mixture thereof.

14. A composition as defined in claim 12, wherein said dipeptide is glutamyl-tryptophane.

15. A composition as defined in claim 12, wherein said analog is creatine or a creatine-derivative.

16. A composition as defined in claim 12, which further comprises an anti-inflammatory, an anti-tumor agent, an anti-oxidant, or an anti-collagenolytic agent.

17. A composition as defined in claim 12, which further comprises an anti-tumor agent.

18. A composition as defined in claim 17 wherein said anti-tumor agent comprises a shark cartilage extract.

19. A composition as defined in claim 17, wherein said anti-tumor agent comprises a shark cartilage extract and an anti-neoplastic agent.